Main Scheme - 7 x 1hrs per fortnight

Working with circles	Recognise and label parts of circle
	Calculate fractional parts of a circle
	Calculate the length of an arc
	Calculate the area of a sector
	Understand and use the volume of a cylinder and cone
	Understand and use the volume of a sphere
	Undertand and use the surface area of a sphere
	Understand and use the surface area of a cylinder and cone
	R - H - Solve area and volume problems involving similar shapes
Vectors	Understand and represent vectors
	Use and read vector notation
	Draw and understand vectors multiplied by a scalar
	Draw and understand addition and subtraction of vectors
	H - Explore a vector journeys in shapes
	H - Explore quadrilaterals using vectors
	H - Understand parallel vectors
	H - Use vectors to construct geometric arguments and proofs
	H - Explore collinear points using vectors
Types of Number and sequences	*R - Understand the difference between factors and multiples*
	R - Understand primes and express a number as a product of its prime factors
	R - Find the HCF and LCM of a set of numbers
	Describe and continue arithmetic and geometric sequences
	Explore other sequences (inc Fibonacci)
	H - Describe and continue sequences involving surds
	R - Find the rule for the nth term of a linear sequence
	H - Find the rule for the nth term of quadratic sequence
Probability	*R - Know how to add, subtract and multiply fractions*
	R - Find probabilities using equally likely outcomes
	R - Use the property that probabilities sum to 1
	Using experimental data to estimate probabilties
	Work with organised lists
	H - Use the product rule for counting
	R - Construct and interpret sample spaces for more than one event
	Find probabilities from tables, Venn diagrams and frequency trees
	Calculate probability with independent events
	Use tree diagrams for independent events
	Use tree diagrams for dependent events
	H - Contstruct and interpret conditional probabilities (Tree diagrams)
	H - Construct and interpret conditional probabilities (Venn diagrams and two-way tables)

Collecting, representing & interpreting data	Understanding populations and samples; Primary and secondary data
	Construct and interpret frequency tables and frequency polygons
	Construct and interpret line and bar charts (including composite bar charts)
	R - Construct and interpret pie charts
	H - Construct histograms
	H - Interpret histograms
	R - Find and interpret averages from a list
	R - Find and interpret averages from a table
	R - Construct and interpret time series graphs
	H - Construct and interpret cumulative frequency diagrams
	H - Use cumulative frequency diagrams to find measures
	H - Construct and interpret box plots
	Compare distributions using charts and measures/**H - Compare distributions using complex charts and measures**
	R - Construct and interpret scatter graphs
	R - Draw and use a line of best fit
	Understand extrapolation
	Criticise charts and graphs
Gradients & Lines	*R - Equations of lines parallel to the axis*
	R - Plot straight line graphs
	R - Interpret y = mx + c
	R - Find the equation of a straight line from a graph (1)
	Find the equation of a straight line from a graph (2)
	Equation of a straight-line graph given one point and gradient
	Equation of a straight-line graph given two points
	Determine whether a point is on a line
	R - Solve linear simultaneous equations graphically
	H - Explore perpendicular lines
	H - Find the equations of perpendicular lines
Non-linear Graphs	Plot and read from quadratic graphs
	Identify and interpret roots and intercepts of quadratics
	Plot and read from cubic graphs
	Plot and read from reciprocal graphs
	H - Understand and use exponential graphs
	H - Find and use the equation of a circle centre (0, 0); simultaneous equations - linear/circle
	H - Understand and use trigonometrical graphs
	Recognise graph shapes
Using graphs	*R - Construct and interpret conversion graphs*
	R - Construct and interpret other real-life straight line graphs
	Construct and interpret piece-wise graphs
	Find approximate solutions to equations using graphs
	Interpret distance/time graphs
	Construct distance/time graphs
	H - Construct and interpret velocity/time graphs
	H - Use a tangent to a curve to estimatie rates of change
	H - Estimate the area under a curve (e.g. estimating distance from velocity/time graph)

Algebraic Manipulation	R - Expand and factorise with a single bracket
	R - Solve linear equations and inequalities
	R - Solve linear simultaneous equations
	R - Expand binomials
	H - Expand three binomials
	(Recognise and) use identities (inc. equating coefficents)
	R - Change the subject of a simple formula
	Change the subject of a known formula
	Change the subject of a complex formula
	H - Change the subject where the subject appears more than once
	H - Solve equations by iteration
Working with Quadratics	Factorise quadratic expressions
	H - Factorise complex quadratic expressions
	Solve equations equal to 0
	Solve quadratic equations by factorisation
	H - Solve complex quadratic expressions by factorisation
	H - Solve qudratic equations by completing the square
	H - Solve quadratic equations using the quadratic formula
	H - Sketching quadratic functions (identifying turning points by completing the square and curve sketching)
	H - Solve quadratic inequalities
	R - H - Solve linear-quadratic simulataneous equations
Multipilcative Reasoning	Understand direct proportion
	Recognise and interpret graphs that illustrate direct and inverse proportion
	H - Construct complex direct proportion equations
	Understand inverse proportion
	H - Construct inverse proportion equations
	R - Ratio problems
	R - Solve problems involving speed, density and pressure
Geometric Reasoning	R - Basic angle rules
	R - Angles in parallel lines and shapes
	R - Bearings
	R - Exterior and interior angles of polygons
	Proving geometric facts
	R - Solve problems involving vectors
	H - Circle Theorem: Angles at the centre & circumference
	H - Circle Theorem: Angles in a semicircle
	H - Circle Theorem: Angles in the same segment
	H - Circle Theorem: Angles in cyclic quadrilateral
	H - Circle Theorem: Angle between a radius and a chord
	H - Circle Theorem: Angle between a radius and a tangent
	H - Circle Theorem: Two tangents from a point
	H - Circle TheoremL Alternate segment theorem
	H - Solve coordinate geometry problems with circles
	R - Pythagoras' theorem and trigonometrical ratios (inc. sine/cosine rule for Higher classes)
	R - 3D Shape - properties, plans and elevations, surface area and volume of prisms

Algebraic Fractions (Higher Only)	**H - Add and subtract simple algebraic fractions**
	H - Add and subtract complex algebraic fractions
	H - Multiply and divide simple algebraic fractions
	H - Multiply and divide complex algebraic fractions
	H - Solve equations with algebraic fractions
Functions & Proof (Higher Only)	**H - Use function notation**
	H - Work with composite functions
	H - Work with inverse functions
	H - Represent numbers algebraically
	H - Algebraic proof
Transforming and constructing	*R - Perform and describe line symmetry and reflection*
	R - Perform and describe rotation/rotational symmetry
	R - Perform and describe translations of shapes
	R - Perform and describe enlargements of shapes
	R - H - Perform and describe negative enlargements of shapes
	R - Identify transformations of shapes
	Perform and describe a series of transformations of shapes
	H - Identify invariant points and lines
	R - Perform standard constructions using ruler and protractor or ruler and compasses
	R - Solve loci problems
	H - Sketch and identify translations of the graph of a given function
	H - Sketch and identify reflections of the graph of a given function